SSC Pacific T2 TECHNOLOGY TRANSFER

SPAWAR Systems Center PACIFIC

COMMERCIALIZATION OPPORTUNITY

Touch Communication Glove with Tactile Feedback

Glove communicates hand gestures and movements wirelessly and receives feedback in the form of fingertip vibration messages

The U.S. Navy seeks to commercialize a Haptic Communication Glove technology filed under U.S. Patent Application No. 12/325,046 entitled “Wireless Haptic Glove for Language and Information Transference,” and U.S. Patent Application No. 12/323,986 entitled “Static Wireless Glove for Gesture Processing/Recognition and Information Coding/Input.”

Background

The number of communication methods has grown significantly over the past two decades: email, instant messaging, text messaging, voice over internet, video conferencing, etc. By utilizing advancements in sensors and software, technologies are being developed to enable more complex messages to be communicated through haptics, which uses the sense of touch. It is one of the oldest forms of communication. Haptic communication overcomes communication barriers for blind and deaf people or where dangerous, dark, or noisy environments prevent the effective use of auditory or visual communication methods.

The Technology

SSC Pacific has developed a glove that can send and receive messages simply by moving fingers. Each finger is fitted with a sensor to measure movement, called an accelerometer, and a vibration motor which creates “sense of touch” feedback. Movements are translated into language and sent wirelessly from one glove to another glove in the form of vibrations that the receiving party feels. For example, if one user were to hold up the universal peace sign, the other user may feel the Braille writing for the word “peace” on his or her fingertips, and a computer monitor would display the word “peace.” In addition to person-to-person communication, this glove can be used to interact with computers, the World Wide Web, and even autonomous robotic vehicles. Entire books could be communicated electronically to the blind using the glove.

Key Benefits

- Silent communication capability for dangerous, dark, or noisy environments
- Ability to communicate through language barriers
- Precise control and interaction with computers, internet and autonomous vehicles
- Invaluable in situations where gloves restrict precise interaction with environment: firefighters, divers, astronauts, and the warfighter
- Provides method for blind people to communicate with deaf people

Development Status

- DoD 5000 Series Technical Readiness Level 3: Analytical and experimental critical function and/or characteristic proof of concept
- Operational field test data results available
- 2 years and $900k total research and development from Navy R&D funding
- Two patents are pending:
  - U.S. Patent Application No. 12/325,046, filed November 28, 2008
  - U.S. Patent Application No. 12/323,986, filed November 26, 2008

For more information regarding technology transfer, please contact us at (619) 553–2778 or email ssc_pac_t2@navy.mil

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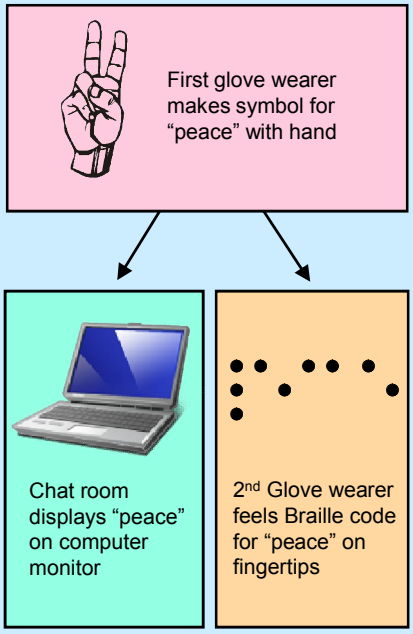
Approved for public release; distribution is unlimited.

Glove prototype features motion sensors and vibration motors on each finger



Space and Naval Warfare Systems Center Pacific (SSC Pacific) is the U.S. Navy’s research, development, test and evaluation, engineering and fleet support center for command, control and communication systems and ocean surveillance.

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